

The role of power Doppler ultrasonography in localization of epidural catheter: an observational prospective study

Thesis

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Abstract

Background: Providing adequate perioperative analgesia during abdominal hysterectomy is essential to the patients. So, we aimed to evaluate the effects of ESPB on patients undergoing open abdominal hysterectomy under general anesthesia. **Methods:** One hundred patients who underwent elective open abdominal hysterectomy under general anesthesia were enrolled and randomized into equal groups. The ESPB group (n=50) received preoperative US-guided bilateral ESPB with 20 ml of bupivacaine 0.25% on each side. The control group (n=50) underwent the same procedure with an injection of 20 ml of saline. The primary outcome is the total intra-operative fentanyl consumption.

Results: We found that the mean (SD) intraoperative fentanyl consumption was significantly lower in the ESPB group than in the control group (82.9 (27.4) μg vs. 148.5 (44.8) μg , with a 95% CI = -80.3 to -50.8; $p < 0.001$). Likewise, mean (SD) postoperative fentanyl consumption was significantly lower in the ESPB group than in the control group (442.4 (17.8) μg vs. 477.9 (10.4) μg , with a 95% CI = -41.3 to -29.7; $p < 0.001$). On the other hand, there is no statistically significant difference between the two study groups regarding Sevoflurane consumption (89.2 (19.5) ml vs. 92.4 (15.3) ml, with a 95% CI = -10.1 to 3.8; $p = 0.4$).

We documented during the post-operative period (0–24 hrs), VAS scores at rest were, on average, 1.03 units lower in the ESPB group (estimate = -1.03, 95% CI = -1.16(-0.86), $t = -14.9$, $p\text{-value} < 0.001$). Likewise, VAS scores during cough were, on average, 1.07 units lower in the ESPB group (estimate = -1.07, 95% CI = -1.21(-0.93), $t = -14.8$, $p\text{-value} < 0.001$).

Conclusion: Bilateral ESPB is effective, minimally invasive, and safe and can be used as an adjuvant modality in patients undergoing open total abdominal hysterectomy under general anesthesia to reduce intraoperative fentanyl consumption and better postoperative pain control.